

Wirginia Wildlife

Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources and to the Betterment of Outdoor Recreation in Virginia

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COVER: Pintails, by John W. Taylor of Edgewater, Maryland.

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End of the Gravy Train

AFTER nearly 25 years of holding the line, the Game Commission is faced with the choice of seeking certain increases in license fees or drastically curtailing its programs. The resident hunting license has been priced at \$3.50 since 1949, and the fishing license has been an equal amount since 1961. During that period the Commission's operating costs have increased some 900% due to inflation, increased salaries, and the demands of serving an ever larger population. It has been this very population growth that has kept the Commission solvent in the face of rising costs of operation. Each year an ever larger number of hunters and fishermen purchase more licenses, generating more revenue than the year before with a growth rate almost exactly matching increased financial needs. The gravy train is over, however, because the rate of increase in license sales has dropped off while at the same time operating costs have skyrocketed.

In 1949 a State pickup truck cost \$1,268, a passenger car cost \$1,197, a game warden was paid \$2,052 by the Commission, and a game or fish biologist earned \$3,984. At the current time a pickup truck costs \$3,243, a passenger car sells for \$2,990, a game warden is paid \$9,168, and a game or fish biologist draws \$11,472. Just last year trout food cost 12¢ per pound while it is currently commanding 20¢ per pound and still going up. If additional revenue is not forthcoming, the Commission will have to curtail capital outlay expenditures and may lack money to match federal grants before the end of the 1974-76 biennium.

A few changes in license fees were proposed during the last General Assembly, but the legislators graciously deferred action on these when they were informed that a four-man Game Commission committee was reviewing all license fees and developing a comprehensive plan that would meet Commission needs over the next several bienniums. The resulting fee schedule was chosen to produce an additional \$1,750,000 annually that will be required to properly fund Commission programs. That committee's recommendations include an increase to \$5 each for the basic resident hunting and fishing licenses, a \$5 resident big game license, a \$20 nonresident hunting license, a \$3 resident and \$7.50 nonresident trout license, a \$5 county hunting and fishing license, and a \$3 three-day trip fishing license. Dip net licenses would go to \$2 and a State trapping license would cost \$15 with a county trapping license priced at \$5. All blind license fees would double. This fee schedule approved by the Commission this month will be submitted to the 1974 General Assembly in January.—H. L. G.

Long-nosed Intruder

CAMPING and fishing on Craig Creek in Craig County has been a favorite pastime of my wife and myself for over 35 years. We have caught or observed (we thought) every species of fish in this stream. However, on July 26, 1973, we were astonished to see a longnose gar swimming upstream in front of our cabin.

We had a good look at it with binoculars for two or three minutes. It was about 25 to 28 inches in length, with every typical gar feature *except* color. It was a rusty orange color, with large black spots from gills to tail.

How did it get so far upstream? Did it come up the James River thru all the dams and obstructions? We would be distressed if the gar would proliferate in this beautiful stream, as we have heard it might damage the other fish population.

Harry W. Kessler, Mayor Fincastle

Although not numerous in the upper reaches, gar are found the entire length of the James River. Since there are no barriers to keep them out of Craig Creek, it is entirely possible you saw one there. It might also have been a muskellunge which, under certain viewing conditions, could resemble a gar. Since habitat is marginal, you needn't worry about gar proliferating.—Ed.

Dissenting Opinion

I'VE read Mr. Callison's story, "Wildlife Management and Its Non-Hunting Clientele," in your September issue several times over. It leaves me quite confused.

At one point he calls us hunters and fishermen a "diminishing minority." NRA claims that there are 17,000,000 licensed hunters and more each year.

One of his points seems to be that non-hunters and non-fishermen like to enjoy the outdoors and their wishes should be considered too. I'm all for better cooperation in the outdoors among hunters and non-hunters. The solution is very easy. Why don't Mr. Callison's friends buy hunting licenses? They can even send their licenses to Mr. Callison, so he could show the Commission how much support his friends deserve. The Audubon groups should really consider this. After all, Audubon himself was a hunter.

People interested in wildlife for nonconsumptive kinds of recreation have never put their money where their mouths are . . . presumably they never will. Let them buy licenses first, along with us sportsmen, and then they should be listened to . . . certainly not before.

Arthur L. Cone, Jr. Vienna

The Great Shot Controversy

By DICK GOULD Fredericksburg

ITHIN the next year or two, there may well gold instead of lead would have gone a long way toward goose, see her falter and lose a few feathers, and then watch impotently as she flutters away from you.

Maybe she'll be no farther than 40 or 45 yards away metal, plastic, ceramic, or combination thereof, which when you shoot, and maybe you'll lay the shot pattern would offer anything close to the desired characteristics: (1) reasonably inexpensive; (2) safe to use in a factor of the property o heck of a good fetch dog.

Nontoxic

that has been simmering on the back burner at least Fisheries and Wildlife in a research program conducted since 1842, but only recently has been shouted into a cause celebré.

this country, gamekeepers who found dead birds occasionally have suspected that at least some of the birds then, the Sporting Arms and Ammunition Manufac may have died of lead poisoning caused by eating spent turers Institute has been insisting that no really suitable shot. Most birds eat a certain amount of gravel which a substitute has been found for lead shot, while the Na collects in their craws and which is necessary to their stional Wildlife Federation has been insisting that curdigestive process. Because the birds don't know the strength rent research is sufficient grounds to put iron shot on difference, they quite often gobble up all sorts of debris, the market. including spent shot pellets, along with the gravel they need. There must be a lot of lead lying around for them____ to gobble, considering that lead doesn't rust or rot, lasts almost forever, and according to one estimate, gunners

opinion. Some biologists have been quoted in print, for instance, as guessing that three or four percent of North America's waterfowl population—maybe amounting to three or four million birds—die of lead poisoning every year. Reports relying on a more discrete arithmetic are at Heron's Lake, Minnesota, during the winter of 1939-40, there have been "spot" reports of that kind from time to time in each of the several North American flyways.

Recognition of the problem has been gradual. About 30 years ago, researchers thought of substituting some less toxic substance for the lead in shotgun pellets. In the forties and fifties, ammunition makers tinkered with various coatings and platings for the lead —which didn't solve the problem because the natural grinding action in the bird's craw quickly removed the plating. They tried other solid metals then—zinc, copper, various forms of iron and steel, even gold and

The precious metals, incidentally, compare quite favorably with lead, ballistically. But they're too costly. A law requiring that all shot pellets be made of pure

come a time when you will blast away at a wild reducing the crowd in your favorite blind. Most gunners goose, see her falter and lose a few feathers, and simply couldn't afford it.

Then in the mid-sixties, various members of the arms The situation is cropping up because of a problem animal industry teamed up with the U.S. Bureau of Sport under contract by the Illinois Institute of Technology Research Institute. When the study concluded in 1969 For well over a century, first in Europe and then in that iron was the most feasible substitute, the poreally boiled over. During the several seasons since

Accusing SAAMI of dragging its feet, NWF pe-Ititioned Rogers C. B. Morton, U.S. Secretary of the Interior, to ban the use of lead shot for waterfowling on federal lands no later than the opening of the 1973-74 spread 6,000 tons of the stuff across the American Lunning season. The NWF grudgingly allowed that a problem really that serious? It's largely a matter of annunition, but the organization ammunition, but the organization insisted that any further delay would be unwarranted.

On the other hand, that kind of panic may be unwarranted, may even be dangerous!

Consider, for instance, that lead has been used almost exclusively for bullets and shot, since the invention of spotty. Since 12,000 ducks were found dead and dying the firearm. And, since waterfowl gunning is done mostly from blinds, there is an inescapable tendency for the spent shot to accumulate in puddles and fields where ducks and geese feed.

> But hunting in one form or another has been going on for centuries. A couple of generations ago there may have been fewer *sport* hunters, but there were many market hunters. Many of those old-timers in the Chesapeake area, for instance, loaded their black powder and shot by the cupful into "punt" guns, and killed dozens of birds with a single blast. Those guys tended to shoot mostly over favorite areas, concentrating lead deposits then just as their grandsons do today.

Yet the concern over duck kills is of relatively recent origin. The mysterious duck deaths seem to have be come a problem about the same time water pollution was becoming a problem. Coincidence? Maybe!

In many of the recent duck kills, sample carcasses have been sent to one laboratory or another, and one expert or another has ruled that the birds died of lead poisoning. In all fairness to those experts, it is worth noting that they rarely offer an explanation in their report. When pressed for an explanation, their logic often runs like this: (1) the bird is dead; (2) there are lead pellets in the bird's craw; (3) lead is known to be toxic; (4) therefore, the bird died of lead poisoning. Could be. But that is a very broad assumption. Even if the bird did die of lead poisoning, there's still room to wonder if the lead that killed the bird actually came from the shot pellets in its craw.

The very fact that several thousand ducks may be found dead within a few days' time and in a relatively small space, is, in itself, a strong indication that their malady acted upon them very quickly. A disease, such as enteritis, or poisoning by a relatively small dose of one of the modern organic compounds of lead or mercury or any one of many agents found in agricultural and industrial chemicals, could account for such sudden deaths. On the other hand, poisoning by metallic lead, such as is found in shot pellets, would be much more likely to bring a slow and lingering death—which would have left the carcasses scattered throughout the flock's whole flight range.

Even if the waterfowl deaths are caused by ingestion of shot pellets, there remain serious doubts as to whether the number of poisoned ducks warrants plunging headfirst into the kind of problems involved in banning lead shot.

In the first place, the nontoxic shot is more expensive. One estimate is that iron shot would boost the price of a 25-round box of shells by 50 percent. To put it another way, that amounts to an additional \$1 to \$3, depending on what brand and type of duck loads you use and where you buy them. If you figure that the average sport waterfowler pops off two boxes of shells per year, that means the ban on lead shot might cost him an additional six shinplasters a year. That doesn't sound so terrible, but \$6 is still \$6. I know several chintzy types who think nothing at all of chiseling a few pennies off their ammo costs by continuing to use the cheaper lead shotshells, unless there was some pretty effective enforcement of the law banning lead shot.

Furthermore, the possibilities that the nontoxic shot may damage the weapon in which they're used and that they may be less effective on the waterfowl must be considered. A study by the Winchester-Western Division of the Olin Corporation, on which the results have just been announced, would seem to indicate that there is some cause for concern on both counts.

The shotshell efficiency study conducted at Winchester-Western's Nilo Farms, near Alton, Illinois, involved the shooting of 2,400 pen-reared mallards at varying ranges with shot made of solid lead, copper, and two different kinds of steel. The test mallards were secured to a special transport device, electrically driven

down a track, with electrical devices used to fire a full-choke, 12-gauge shotgun which was clamped in a rigid mount. All variables, such as wind velocity and direction, temperature, etc., were carefully monitored. After being fired upon, the birds were submitted to rigorous examination and classified as to whether they were "bagged" or "crippled" or "survived."

The Nilo ballistics people studied it all and concluded that Ike Newton's laws of motion are still valid, the striking energy of a pellet is still proportional to the density of the material of which it is made. In other words, lead is heavier and lead hits harder.

They said the most practical measure of shotshell efficiency was the number of birds bagged per bird crippled. There didn't seem to be too much difference within 30 yards, but beyond 40 yards the copper load crippled 3.16 times as many mallards as did the lead load in bagging a given number of birds. The No. 4 steel crippled 4.31 times as many, and the No. 6 steel crippled 6.75 times as many ducks as did the lead load.

They also scotched another currently popular theory about steel shot. Some experts have claimed that the steel shot would lose energy so fast they would cripple only in a fairly narrow zone. They contended the steel shot would kill cleanly at close ranges and leave the birds practically unharmed at longer ranges. The Winchester-Western test didn't work out that way. The No. 6 steel, for instance, continued to cripple 10 percent or more of the mallards at ranges up to 80 yards. While the tests indicated that pure copper shot is only a little less efficient than lead but much more efficient than steel, copper is also toxic. While its effect may take longer to appear than does lead poisoning, it may be just as deadly.

Meanwhile, as a part of the same test, Winchester-Western engineers were pumping 5,000 rounds through each of six full-choke test barrels to test the effects of each of the four kinds of shot on the barrels. That's more shooting than the average duck hunter will do in a lifetime. They found some wear at the chokes of each of the barrels, with the heaviest wear in the barrels using the steel shot. Most of this wear occurred during the firing of the first 500 rounds, and the total amount of wear never amounted sufficiently to compromise the safety or pattern performance of the barrels. But the engineers pointed out that, when used with steel shot, some doubleguns with thin, soft barrels may be expected to wear more quickly and more severely—and the barrels may separate!

All in all, the whole controversy comes down to a trade-off. The Nilo people claim the best available estimate of losses due to lead poisoning is about two to three million waterfowl, and they used their ballistics studies to compute a prediction that a law requiring the use of steel shot would increase the annual crippling loss of waterfowl by three million birds.

It all boils down to a strong need for more study before any drastic action.



By R. B. BELTON, JR.

Manassas

STOOD on the summit of Old Rag Mountain and let the sensation of height and space engulf me. It was exhilarating and satisfying after the deceptively arduous trek to the top. The wind was blowing, not viciously but with just enough force to make you feel really alive and aware of your surroundings. The sky was a deeper blue than usual—azure, the artist probably would have called it—and occasional clouds stood out as if in bas-relief. Crows, gliding on the air currents as they rose and fell at the ridge's crest, rent the air with their discordant "cawww, cawww," as if in protest at not being able to utter a more melodious welcome (or protest) to the invading humans.

The Virginia Piedmont reached out from the foot of the mountain in search of Tidewater and the Atlantic beyond. Directly below me the gurgling little rivulets that combined again and again to form the headwaters of the Hughes River, hidden below by the hemlock-dominated vegetation along its course, begin a journey that will take them, via the Hazel and the wild Rappahannock, across that Piedmont in search too of the Atlantic.

Behind me, to the west, stood the cloud-shrouded main line of the Blue Ridge—Hawksbill and Stony Man and many others—stretching as far as the eye could see. The ever-present mists dulled their outline and softened their appearance but did nothing to mar their overall beauty.

Old Rag, 3291 feet in elevation, stands slightly east of its companions and, though outdone by such as Hawksbill (4049) and Stony Man (4010), its effect is enhanced by its direct ascent from the lowlands. The Nethers parking area, just outside Shenandoah National Park, provides the easiest access for those intent on hiking Old Rag.

My friend, Army Major Russell Ray, and I arrived there after getting directions in nearby Sperryville. The parking area is reached via Routes 522, 231 and 602 and is about 12 miles south-southwest of Sperryville. From this point, elevation just under 1000 feet, two routes lead to Old Rag's summit. One, the Ridge Trail, branches to the left and turns on to the ridge line that

leads to the mountaintop. If this trail continued straight upward, you would need plenty of mountain climbing skill and equipment to negotiate the rock faces that stand between you and the peak. The Ridge Trail is tough enough as it is, though it doesn't seem that way at first.

After about forty-five minutes of climbing, at 2600 feet of elevation, we turned on to the ridge line and shortly saw the "summit" ahead. What we saw was only the first of four "summits." To reach the last and real one, we had to get over, around or through the first three and snow banks in colder places along the trail had partially melted and, re-freezing, had left treacherous patches of ice. (Neither the ice nor the strain of the climb appeared to bother a group of children who reached the top in better shape than Russ and I and their parents as well.)

The views from each succeeding summit are, in turn, more spectacular, but the trail itself is fascinating. The crowning touch, of course, is the ancient granite—it dominates the heights in monolithic splendor. Born of fire and friction and worn by the forces of nature for more than a billion years, it endures still and yet, little by little, constantly changes.

Huge boulders are strewn about in ordered chaos; outcropping drop off to dizzying heights, and along one sheer face a fault line is clearly visible. The boulders are rounded from their constant struggle with wind and rain. Their outline, and that of the entire Blue Ridge, has been softened; it has become more subtle. They have mellowed with age, like fine wine, for they are part of the Appalachian system, one of the oldest mountain chains in the world.

Mountain laurel grows in crevices of the rock and so does scrub pine. One pine has established itself in a crack near the edge of a rather large rock. If the pine's root system continues to expand to any large degree, it will destroy itself—the outer portion of the rock will fall away and the tree, roots exposed, will die.

In places where the soil is a little more abundant, a few white pines grow, though none of the trees at or near the summit are more than fifteen to twenty feet tall. The cold winds, low temperatures and lack of nourishment at this elevation dictate this.

The views of the rocky summits are a photographer's delight. Cloud-flecked sky is a natural backdrop, and the dwarf pines and low-growing laurel add an aura of

fascination that assures really interesting photos. The laurel serves one very utilitarian purpose as well, however. In some places it has established itself in rocky crevices where its strong branches provide a much needed handhold for weary hikers. Many of these laurel branches have been worn smooth from their use as natural handrails.

After many side excursions to view such things as shelf fungi, lichen and numerous varieties of moss, we reached Old Rag's summit. From there we could look back on the way we had come and, for the first time since we turned on to the ridge line, we could get a preview of what lay ahead of us. After enjoying the view and the delight of having reached the top, we set our course for Byrd Shelter number one, a stone shelter 440 feet below the summit of Old Rag. A roaring fire was going in the fireplace when we arrived at the shelter, and we chatted briefly with its inhabitants, hikers like ourselves but more fortunate—they were going to spend the night.

Here we linked up with the Old Rag Saddle Trail, which in turn led us to the Old Rag Shelter and the Weakley Hollow Fire Road. The Old Rag Shelter, an Adirondack-type structure, has six bunk beds; a spring is located 250 feet farther downhill. (Byrd Shelter number one has no bunks, and the nearest water is found near the summit, a rather rugged half-mile away. However, with its inside fireplace and canvas cover across the front, Byrd Shelter number one offers considerably more warmth for wintertime hikers who want to stay overnight than does Old Rag Shelter.)

We followed the Weakley Hollow Fire Road back to the Nethers parking area. This route, reversed, can be used as a somewhat easier though not nearly so spectacular route to Old Rag's summit. The fire road route is a very interesting one for the plant lover, however. Running cedar grows alongside it in some places by the acre, and ferns are in great abundance. In the spring this area must abound in moisture-loving wild-flowers. The views of one of the Hughes River's tributaries, which the fire road parallels for some distance, are beautiful. The white water and deep pools set a trout fisherman's mouth to watering.

In wet weather the streams may pose somewhat of a problem near the end of the return trip. Six to eight inches of water, at the shallowest fording place, flowed over the rocks, and at no nearby point could we jump across. After a fruitless reconnoitering both up and downstream, Russ plunged gamely in. I was already standing on the other side, grinning and dry, because I was wearing a pair of Canadian waterproof boots I had bought in Maine during a spring excursion to Acadia National Park. Russ' tightly laced Army combat boots repulsed the water though, except for a little that seeped in around the soles, and I was robbed of a good laugh.

To Skyline Drive Weak mi Old Rag Shelter SADDLE TRAIL %1.0 mi. Byrd Shelter OLD RAG MTN. EL 3291 Q RAIL Park Gravel Road = = Dirt Road ooo Good Trail Other Trail Spring *Distance marker

To Sperryville (D.C. 81 miles)

From there we walked the remaining distance to the car, only one hundred yards as it turned out, and sat down to review our outing. Russ and I had hoped to see a lot of Old Rag's permanent (or semi-permanent) residents during our hike, but the soaring crows were the only representatives of the wildlife community who made their appearance, except for a few unidentifiable birds which flitted about in the hemlocks along the streams. In late January my wife, Carol, and I had been more fortunate in another area of Shenandoah—between Thornton Gap and the Big Meadows camping area we observed one hawk, two ruffed grouse, eight deer, a vole and numerous downy woodpeckers and tufted titmice.

The distances to the various points on the mountain work out like this: from the Nethers parking area to the summit via the Ridge Trail is 2.9 miles; from the summit to the Byrd Shelter is 0.5 mile; from Byrd Shelter to Old Rag Shelter is 1.0 mile; Old Rag Shelter to the Weakley Hollow Fire Road is 0.4 miles; and from the fire road junction to the Nethers parking area is the final 2.8 miles. The total distance is 7.6 miles.

Old Rag Mountain is a worthwhile combination of opponent, friend and venerable landmark to suit most any outdoorsman.

FIND THE PATTERN

and You Find the Bass

By BILL COCHRAN Roanoke

Roy Brown uses depth finder-fish locator to seek out underwater structures.

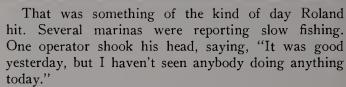
ROLAND Martin is one of about a half-dozen—if that many—bass fishing experts from across the country who seemingly can catch fish even out of a flooded tractor rut. But what about at Smith Mountain Reservoir? How would one of the profishermen do there?

That was the question on the minds of many fishermen around the sprawling 20,000-acre impoundment just southeast of Roanoke when Roland came to try his luck one day not long ago.

Smith Mountain isn't an easy bass lake; just ask the weekend duffer. Sure, its deep, clear waters produce some impressive catches of largemouths and smallmouths March through mid-May, but there are days it can be as stingy giving up fish as a flooded tractor rut.



Roland poses with this hefty string of Smith Mountain bass before releasing them.



FISH LO-K-TOP

Roland, 32, has taught school and guided professionally on South Carolina's famed Santee-Cooper reservoirs. He now is with the Lowrance fish locator people in Tulsa, Oklahoma, and had come to Virginia on business directly from a Bass Anglers Sportsman Society (BASS) tournament on Lake Keowee, South Carolina, where he placed fourth. Roland has won more money in BASS tournaments, well over \$25,000, than any other angler.

"I've heard a lot about Smith Mountain. I look forward to fishing it," he greeted me with enthusiasm at a 5:30 breakfast in a Roanoke restaurant after getting only four hours of sleep.

An hour later, we were launching his plush 16-foot Ranger bass boat at Graham's Marina and firing up the powerful 140 horsepower engine. The craft is so fast that it threatens to rip off the ears of its riders as it zooms across the water, but there is a purpose for all this speed. Roland is a pattern fisherman.

"Ninety percent of the bass seek out a certain depth, a certain water temperature, a certain water type," he explained to me.

Thus, Roland's secret to filling a stringer with bass is simply to explore different waters at different depths with different lures until he discovers the exact kind of spot bass prefer that day. Then it's just a matter of zooming to spot after similar spot reaping a harvest.

"For example, a pattern might be 20 feet deep on the end of a big point. If that were the pattern, there probably are a couple hundred points that are identical, and it is just a matter of scouting them out on a contour map. Then you just can fish that one type place and not waste time throwing to 10 feet of water, or 30 feet of water, or to the shoreline."

The pattern, Roland quickly discovered on Smith

Mountain his first try, was to fish the coves. He took several bass using a small bucktail jig with a short piece of pork rind attached to the hook. He fished the jig on a spinning outfit with eight-pound line.

In the afternoon, the pattern changed somewhat. Roland found the bass back in the tail of the coves, often in water about three feet deep. In fact, the coves that produced in the afternoon were murky, flat-banked areas most fishermen would pass up. Roland nosed his boat back into one and promptly caught three bass and lost a fourth.

"Let's start searching for the most horrible-looking coves we can find," he told me, and we began roaring from one to another. I'm sure we caught bass from several insignificant coves that seldom see a lure all year. What the bass were doing, probably, was seeking the shallow-water areas where the penetrating rays of the sun had boosted the water temperatures several degrees above what it was in the big-water areas.

A less knowledgeable fisherman than Roland might have hit one such cove during a day's fishing and caught a bass or two from it. Instead of realizing that he was onto a pattern, he probably would continue on down the shoreline casting methodically. His travel soon would take him from the productive shallow water to deep water. His explanation about catching the bass in the cove would be, "I guess they started biting for a few minutes."

Catching bass isn't just a matter of them suddenly biting. It is locating the kind of terrain they are inhabiting that day, then offering them the type lure best suited for the situation.

The lure picking up the fish for Roland was a chartreuse-colored spinnerbait. He would cast it to the rear of the cove and retrieve it rapidly, a new method of fishing spinnerbaits similar to that used for years by fly and spinner fishermen. Roland advises making long casts when working coves, so as not to spook the bass. "You can cover a lot more water with a spinnerbait than you can with other lures," he explained.

Roland accounted for 12 to 15 bass, including eight keepers going to five pounds. He strung several of the bass in order to let me take a picture, then he released them.

Roland's parting words were, "Always remember, tomorrow's another day with different water and weather conditions, so you might have to repeat the process of finding the pattern." Sure enough, he and a couple of other fishermen were back on the lake the next day. I had to be in the office and couldn't go. It was cloudy and cool, and the bass had moved from the shallow-water areas of the coves out into the 5-to 10-foot depths, they told me. The spinnerbait was worked a little slower, and the result was 17 bass weighing a total of 63 pounds.

Roland doesn't claim to have discovered pattern fishing, but few people have perfected it to a greater

science than this handsome young man. It enables him to come to a reservoir he's never seen before and out-fish the natives.

Advanced pattern fishing requires a computer-like brain, concentration, determination and confidence. It also can require the modern, scientific tools of angling: depth finder-fish locators, topographic (contour) maps and electronic water temperature gauges. None of these requirements, however, is beyond the weekend duffer who desires to seriously improve his bass fishing skill.

Let's make a closer examination of the three most important tools of the pattern fisherman: locator, map and temperature gauge. Fish locator-depth finders are an increasingly popular angling device these days, so there is little need to go into the principle of how they operate, other than to say they denote the depth of the water, the configuration of the lake's bottom and any obstructions between the water's surface and the bottom, be they submerged trees or schools of fish.

The striped bass and white bass angler often will use his locator to find schools of fish, but for the black bass fisherman, its importance lies in denoting water depths, and even more precisely, pinpointing submerged islands (often called structures), river channels, sunken roadbeds, points, brush and similar targets patterns often are established around. An underwater clump of brush, for example, can mean the difference in two to three bass and a great big zero.

To reap the best results from a locator, bass fishermen should use it along with a topographic or contour map. Such maps may be purchased at some book and office supply stores, or may be ordered from the Distribution Section, Geological Survey, 1200 South Eads Street,



Roland's bass boat is built to move rapidly from one productive spot to another.



Arlington, Va. 22202. In order to get the map you need, request an "Index to Topographic Maps" for the general area you are interested in. Local U. S. Army Corps of Engineers offices can be helpful in securing map information. Handy books of topo maps for Smith Mountain and Gaston reservoirs are available for \$3.88 each from the Alexandria Drafting Co., 417 E. Clifford Ave., Alexandria, Va. 22305.

Contour maps indicate lake depths with contour lines that denote elevations. Also, any man-made items, such as roads, home sites, and the like in the area before the lake flooded, as well as original creekbeds and high points, are shown on the maps.

An experienced angler can study a contour map and determine productive spots for bass without ever having observed the water. Roy Brown, a well-known bass fisherman from Martinsville, relates this in a story he told me concerning Blake Honeycutt, one of the pioneers in structure and pattern fishing.

Visiting him at his home in Hickory, North Carolina, one day several years ago, Roy asked Blake, "How about marking me a place or two on this map where I can catch fish in Smith Mountain." Blake never had seen Smith Mountain, but he took a topo map of the impoundment and peered at it for a while with a magnifying glass.

"Here's where I'd try," Blake told Roy. It was where the water had covered an old home site. A road approaching the now removed house traveled along a ridge, and Blake said this obstruction, about 10 feet under water, would provide an attractive place for bass.

Back home, on a March day, Roy headed for the spot, and the first time he fished it caught four citation smallmouth bass better than four pounds apiece, including one weighing 5 pounds, 7 ounces, not to mention a hefty largemouth.

"I became a believer," Roy exclaimed in understatement.

Productive spots such as these should be well marked on a fisherman's map. They can be a bass-producing gold mine over the seasons. To refind them, use your map to get you in the correct area, then your locator to pinpoint the exact spot. Many successful fishermen carry along small Styrofoam buoys with a line and weight attached to mark the spot they want to fish, then work their boat and lures all around it. One good structure can lead to another for a pattern fisherman, because he is going to search for places with similar features.

Bass can be caught in water temperatures from below 40 degrees to above 80, but like people, they prefer an optimal temperature range for comfort. This normally ranges around 65 to 75 degrees. With that in mind, some pattern fishermen will go a step farther in use of their locator and maps. They'll employ an electronic temperature gauge to seek out the preferred temperature range of the bass. Such battery-operated devices have a probe, marked off in feet, which is lowered into the water. The temperature is indicated by a needle on a dial.

The idea of pattern fishing, then, is to cover as much fishable water as possible—that of the best depth, best cover and best temperatures—leaving the unproductive water to the novice. It not only requires scientific tools and know-how, but also the willingness to change your techniques, to experiment, in order to meet different conditions and establish patterns. A pattern might be a certain lure, or even lure color, action or weight; it might be a certain kind of cover, like sunken treetops; it might be a certain depth. Learn to use your skill and angling tools to find it and remain aware that it can change rapidly.

Perhaps the most unscientific part of pattern fishing, but not to be overlooked, simply is to informally check with local marina operators and fishermen to determine what depth and in what type areas bass are being caught. Simply observing which direction the bass boats roar off from the dock each morning can be a clue. All this is fodder for establishing a pattern that will keep your rod bowed, your heart light.



Roland found bass like these would take spinnerbaits fished back in the cover.

Psst-Play it cool this fall. There's a meat shortage.



Hi, there.



Photographer Michael W. Reilly of the Harrisonburg News Record just happened to have camera in hand when he saw this slightly confused deer make a few casual overtures to some cows in a Shenandoah Valley pasture.

With today's high beef prices, this deer better be careful what company it keeps!



Wait a minute. Don't rush me.

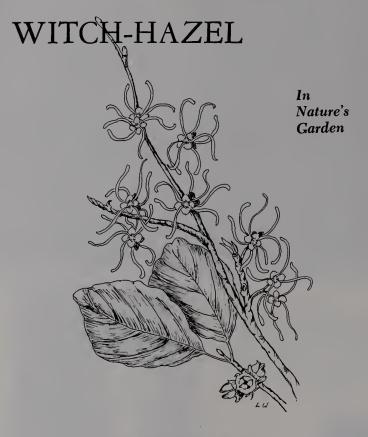


I feel like I'm being followed.

Back to the woods-



NOVEMBER, 1973 11



(Hamamelis virginiana L.)

By ELIZABETH MURRAY

Charlottesville

Illustrated by Lucile Walton

ITCH-HAZEL seems, almost consciously, to fill a gap in the seasons. Just at the time when every other shrub is shedding all foliage and leaving nothing but bare twigs for the winter months, witch-hazel suddenly produces a large number of spidery yellow flowers which in November and December are really the only blossoms to be found in the Virginia woods. It is hard to see quite what the plant gains by this winter blooming, for no growth takes place in the ovary until the following spring, and so the ripening period is not advanced at all. Last year's nuts are maturing while this year's flowers are blooming (and this year's leaves are falling). The seeds are finally ejected from their woody pods with an explosive force which may carry them several yards away from the parent plant; one source says as much as 45 feet. This is a nice way to aid in the species' dispersal. The generic name of witch-hazel, Hamamelis, refers to the property of fruits and flowers being on the plant at the same time. Hama is the Greek word for "together" and mela means "fruit."

The Hamamelidaceae or witch-hazel family is a small one containing only three genera in this part of the world, Witch-alder or Fothergilla, Sweet Gum or Liquidambar and Hamamelis itself. Hamamelis virginiana is a coarse shrub or small tree up to 15 feet high. The bark is sepia or dark brown, blotched

with lighter markings which were responsible for the shrub's name of Spotted Stick among the Onondaga Indians of New York. The leaves are alternately arranged and are a deep olive green, oval-shaped and coarsely toothed round the edges. They turn a spotted dull gold in the fall.

The clustered flowers are bright yellow, with four fertile stamens alternating with the four long, narrow petals, the latter curled and twisted. In between the fertile stamens are four more stamens which are infertile and scale like. The flower clusters appear in what would have been the axils of the leaves, only since the leaves have usually been shed by this time there is just a leaf scar under each cluster.

Witch-hazel is common in rich woods throughout the northeastern part of America and as far south as Georgia and northern Florida. It is easy to spot in the woods simply because it is the only thing flowering in the very late fall and winter.

The wood of witch-hazel is rather tough but pliable. The word "witch" here has nothing to do with sorceresses but comes from the Saxon word "wych" which means "bending" or "hanging down" (as also in "witch-alder" and "wych-elm"). Forked witch-hazel sticks are used as water-divining rods, and slender branches can be used to tie up fence rails, although the wood has no real commercial value.

An extract of the bark has been used medicinally for years. It is a demulcent and has a variety of applications for minor irritations which require some kind of skin soothing. As a child, I used to suffer quite badly from insect bites and urticaria, and my father incorporated witch-hazel into the lotion he produced for my relief. My mother and father were English country doctors who dispensed their own medicines for the first 20 years that they were in practice. Every bottle was scrupulously labeled with contents and dose, wrapped in white paper, sealed with sealing wax and relabeled (I loved to help with the details of this procedure). My own bottle was spared the wrapping paper but it was carefully labeled with the red "For External Use Only" sticker, and under this was written, in my father's careful longhand: "Liquor hamamelidis and Calamine—Bite Lotion for Biz" (my pet name). Witch-hazel lotion is also known as Pond's Extract since all the rights to its manufacture were procured in the late nineteenth century by the Pond's Extract Company of London and New York.

One of the rather effusive older flower books to which I sometimes refer talks about the profusion of witch-hazel's showy yellow blossoms as "giving to November the counterfeited appearance of spring." I think this is going a bit far! The flowers are not all that showy, and if they appeared when there were lots of other things blooming, they would scarcely be noticed. But they do not, and I am grateful to the little yellow spiders just for that.

VIRGINIA WILDLIFE

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CONSERVATIONGRAM

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THREE REPRESENTATIVES OF THE GAME COMMISSION WERE HONORED recently in the 1973 Governor's Conservation Awards Program. Raymond V. Corning was named Soil Conservationist of the Year for his efforts to combat the harmful effects of sedimentation and water fluctuation, and Game Biologist Alan Guthrie was selected as Wildlife Conservationist of the Year for his work on a successful deer trapping program. Miss Ann Pilcher, from the Commission's Education Division, received a certificate of merit for her outstanding efforts in the field of conservation education. Held annually, the awards program is sponsored by the Virginia Wildlife Federation, the National Wildlife Federation and the Sears Roebuck Foundation.

A PROPOSAL FOR INCREASED HUNTING AND FISHING LICENSE FEES will be presented to the General Assembly in January and will be the first request for an increase in the basic hunting license fee in 25 years. The proposed increase is designed to bring the revenue from hunting and fishing license sales, the major source of income for the Commission, in line with the steadily rising cost of operation. The planned increases are considered moderate in view of current inflationary trends, particularly since the Commission's operating budget now exceeds its license income, which will force curtailment of capital expenditures.

The proposed increases, developed during a yearlong study by a special committee of Game Commissioners, would raise license fees to \$5.00 each for state resident hunting and fishing licenses. Nonresidents would pay \$20.00 for a hunting license and \$20.00 for a deer, bear and turkey license. Resident fee for the deer, bear and turkey license would be \$5.00. Blind licenses and certain other fees are also scheduled for increase under the new plan.

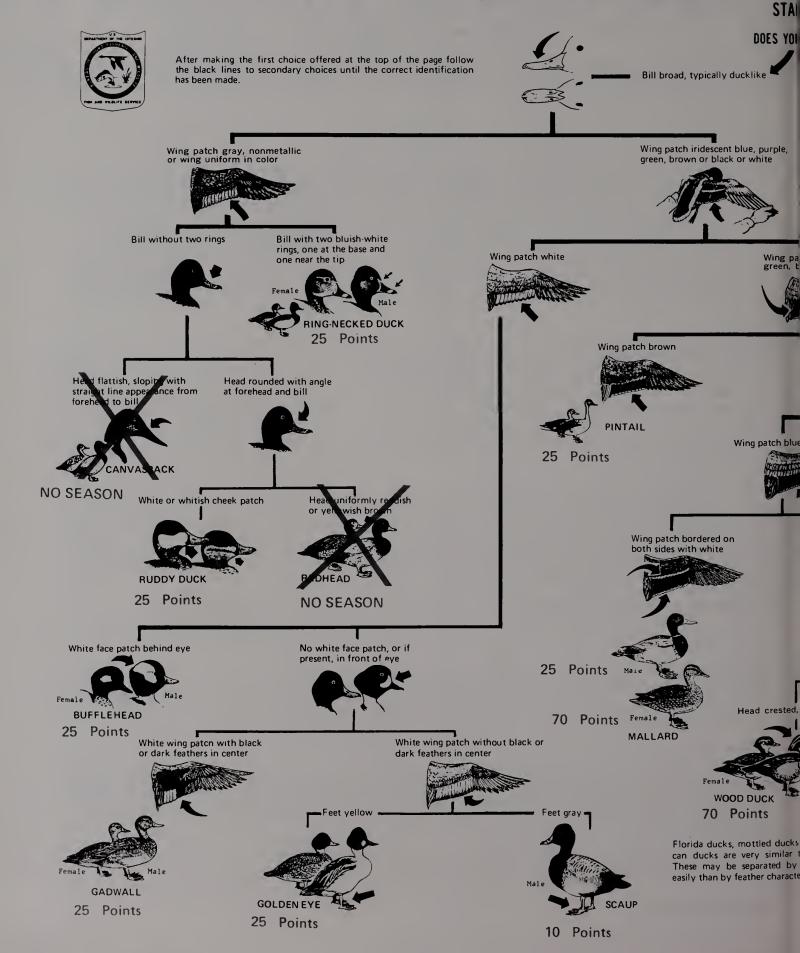
The basic state resident hunting license fee was set at its present level in 1949, and the resident fishing license was raised from \$3.00 to today's \$3.50 in 1961.

VIRGINIANS RECEIVE AWARDS AT 51ST IWLA CONVENTION. Convened at Duluth, Minnesota, the Izaak Walton League of America awarded the Valley Ladies Chapter of Front Royal, Virginia the Grace O. Beach award for increased membership. The Arlington-Fairfax IWLA chapter received the Best Chapter Bulletin award for its outstanding newsletter.

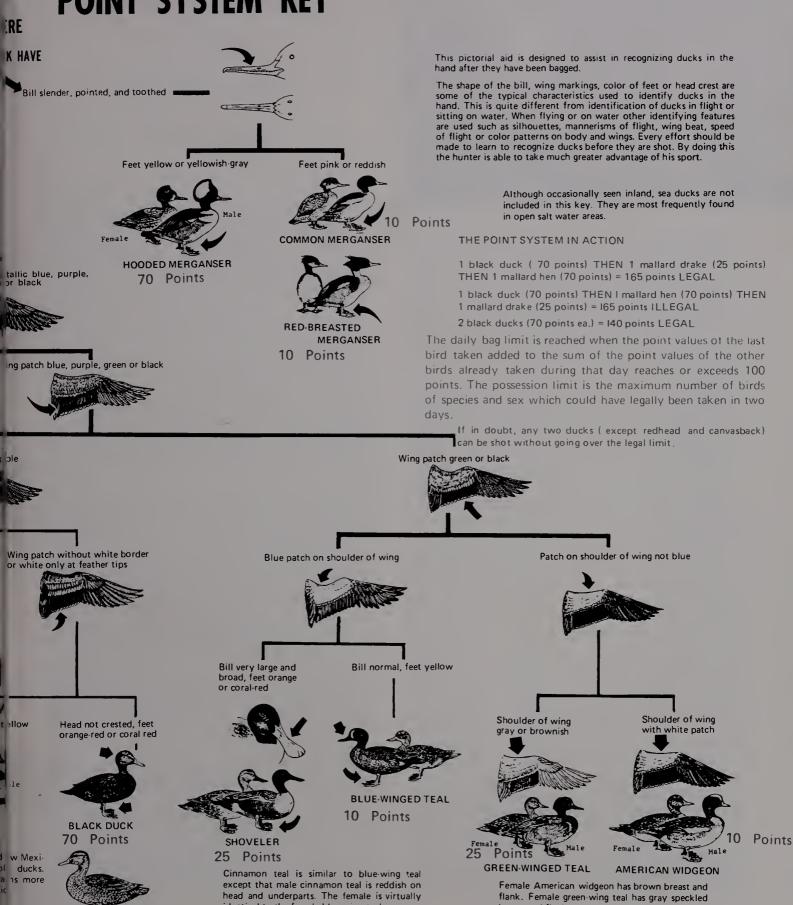
THE NEW RIVER PRODUCED A RECORD WALLEYE recently for angler Roy Barrett of Fries, Virginia. Now the state record walleye, the fish weighed 22 pounds, 8 ounces and measured 33 inches long. Mr. Barrett used a spinning rod to haul the lunker from the Byllesby section of the river.

13 NOVEMBER, 1973

1973 DUCK HUNTER'S



POINT SYSTEM KEY



breast and flank.

identical to the female blue wing teal.

Florida Duck 25 Points



HE moon was beginning to settle behind the mountains in the west as I left camp for my deer stand overlooking a gap in Virginia's Appalachian Mountains. Within another forty-five minutes the eastern skies would begin to grow gray as opening day dawned.

I settled down beside a large rock and began the long vigil so familiar to stand hunters. Time passed and the skies became lighter until it was bright enough to see clearly the entire gap.

As anyone who has ever tried a deer stand knows, it is hard to stay warm and consequently quiet. I was doubly in trouble on that score for the day before I had back packed in a driving rain which continued through the day and late into the night and, as a result, most of my clothing was either wet or at least damp. To make matters worse the wind began to blow and though it made life more miserable for me, I began to worry lest the wind shift and make my presence known to the deer in the vicinity.

Suddenly, after enduring three hours on that stand, I detected a movement in the brush below me. I kept watching almost reluctant to believe it was a deer. Then I saw it again. This time the outline of a deer became visible. After several more seconds of agony I could see very distinctly the outline of antlers. I looked again to make sure my eyes weren't deceiving me and then carefully brought up my rifle. As I centered the cross hairs behind his shoulders, I squeezed the trigger. Nothing happened. Then I realized the safety was on.

This hunt had really begun a year earlier in the fall of 1971. I am in the Army and after being away from Virginia for over five years, I was reassigned to the Washington, D.C., area. All through high school and college I had hunted for deer in Virginia with good results, but upon return home it seemed as though most of the old hunting areas were overrun with hunters. On the Sunday before the 1971 opening day I drove down to the George Washington National Forest near Front Royal, Virginia, and was appalled at the number of hunters jammed in the woods on both sides of the roads. I passed up deer hunting in 1971.

Eight Points and a Back Pack

By DALE THOMPSON

Arlington

Several months after the season closed I began to read everything I could about the public hunting areas in Virginia, and the Virginia Game Commission is to be commended on their pamphlets covering public lands. After much reading I found an area which appealed to me and seemed to fit my needs. First, the area was described as one with a good deer herd but with very little hunting pressure and, secondly, it consisted of over 15,000 acres with limited access. I wanted an area in Virginia in which I could do two things. First, I wanted to be able to hunt in an area relatively free of other hunters and, secondly, I wanted to try back packing into good game country. I have read and been enthralled with the stories of Colonel Townsend Whelan and other hunters, particularly those living in the western states, who have carried their gear in on their backs and have been able to enjoy hunting in relative seclusion. I wanted to know if it was possible to do the same thing in the

After selecting a public hunting area, I purchased the topographic maps which cover the area and began to look for likely spots to hunt. Once I had selected several likely areas on the maps, it became necessary to actually scout the area and evaluate the spots I was considering. So one weekend in August I drove down to the area which is about 180 miles from Washington, D.C., and began to reconnoiter the area. I spent most of the day climbing ridges. The area looked very promising and I selected several stands.

Now that I had found an area which had a good deer population and was reputed to enjoy little hunting pressure, I began to work on putting together the equipment I would need to pack in and stay for a week if necessary.

As a Boy Scout twenty years earlier I had accumulated a hoard of camping equipment which my parents had saved, and this became the nucleus of my gear. Some of it was too heavy or obsolete to be suitable for back packing, so I had to pick up some replacements. Two of the most important items that were replaced were an army surplus rucksack and an army surplus pup tent. In their place I selected a modern back pack and a lightweight tent with a floor. I had a light duck down sleeping bag so I used that.

After getting all of my gear together and packing it in the pack bag, I found that with food and everything the pack weighed in at forty-five pounds, a little on the heavy side when most people try to keep the weight down to about thirty pounds. A large part of the problem was the amount of clothing I was taking, but with the dramatic range of weather conditions possible in the mountains in November, I felt it was better to have too many clothes than too few. As it turned out I was more than glad I carried all the clothes I did.

The last weeks before deer season passed and then the day before the season opened came; it was time to make the trip to Staunton. I left Arlington at 7:00 a.m. Sunday morning and began the four-hour drive. It was raining as I left and when I got to Middleburg, Virginia, it turned to snow. The snow continued until I crossed the Blue Ridge and turned south in the Shenandoah Valley at Winchester. Then it began to rain and didn't let up until after dark. I arrived around noon. I put on my pack and a poncho and started hiking back into the mountains.

I followed an access road for about a mile, passing only two hunting parties along the way. The easy part of the trip was soon over, and I turned off into an overgrown logging road and began to ascend the mountains.

The rain continued and the fog was beginning to settle in, making it impossible to see the ridges' tops, but my spirits remained high. All along the way I flushed grouse and saw plenty of deer signs. It was after 3:00 p.m. and I had been packing for three hours when I reached the crest of the mountain I wanted. Following the ridge north soon led me into the densest laurel jungle it has ever been my misfortune to enter. The brush seemed to reach out and grab my pack and hang on for dear life. The laurel, rain, and the long climb began to take their toll and I despaired of ever arriving at the camp site which I had planned for the northern tip of the mountains. My legs turned to lead, and my weary body dictated my camp site. It was the only clear area close at hand and it straddled a deer trail. There was a large flat rock that made the spot more inviting. I could sit on it as well as set my sterno stove on it to cook while I stood up.

It didn't take long to set up the little tent and get everything in order. Although I was cold, wet and tired, I decided to do a little more scouting and pick my stand for the morrow. I hadn't gone more than 75 yards from camp when I saw deer in the gap. They must have seen me at about the same time for they were off and all I saw were bobbing flags. I was now quite happy, forgetting my wet misery and set about selecting my stand. A little way up the slope was a large rock which looked like just the spot from which to watch the gap. I walked over to it and took out a small can of white spray paint and sprayed the rock.

As I walked back to camp I sprayed trees and snags to mark my path. In the morning I would be able to walk right to my stand with a flashlight without getting lost or breaking a leg. As soon as I reached camp I started to boil some water for coffee and then crawled into the tent to change clothes. Soon the water was ready and I enjoyed the first warmth since I had left the car four and a half hours earlier. While I was drinking coffee, a can of chili was simmering on the little stove. The rain continued to fall but I felt quite comfortable even though I was a little damp. While I sat there in the doorway listening to the rain and drinking coffee, I wondered what Daniel Boone must have thought when he was caught out in the wilderness on a rainy night.

About 5:30 p.m. I decided to turn in. I zipped the sleeping bag up around me, pulled on a stocking cap and dozed off. Some time around 10:00 p.m. I awoke and found that the rain had stopped. I listened to the night sounds for awhile and then fell back to sleep. Several times that night I awakened and each time checked the hour. About 5:30 a.m. I got up, had a little breakfast, and then got ready to leave for my stand.

My first shot at a deer was foiled by my failure to push the safety off. However, the deer continued moving along below me apparently unaware that anyone was near. As he came out from behind some trees I remembered to push the safety off and squeezed the trigger. This time the Savage fired. The buck jumped and began to run. I jumped up and levered in a second round. As I took aim for a second shot the deer collapsed.

In less time than it takes to tell it, I bounded over to the deer. There lay a beautiful eight-point buck.

The easy part of the hunt was over and the hard part soon to begin. After cleaning the buck and striking camp, I began the arduous task of getting the deer and my equipment out to the road.

For six long hours I struggled with that deer (later weighed at 178 pounds), trying to wrestle him from the mountain tops. I was finally forced to carry the pack 100 yards at a time, go back and drag the deer up to the pack, and then start out with the pack again. Over and over I went through this routine until, after what seemed like eternity, I reached the access road and a kind hunter stopped and drove me to my car.

To me the trip was a success in every respect. I found that it is still possible to hunt on public lands in Virginia without seeing or hearing other hunters. I am also certain that back packing into good game territory and setting up a small camp close to game can increase one's chances of success. By being able to spend all my time where the deer were rather than wasting time in the morning climbing the mountain or leaving early in the afternoon to get down before dark, I increased my chances of success.

This year I'll be back trying the same technique but, hopefully, I'll be able to reduce the weight of my pack before then.

Get Out of My Woods!

By RICHARD D. ROE Steubenville, Ohio

HEN the disturbance came into hearing, it was still in the scrubby timber at the southwest corner of the acre of hawthorn thicket. Only a moment earlier I had paused at the edge of a clearing on the north side of the thicket. At the first sounds I crouched—as much to see under the canopy of interlaced thorny branches as to remain inconspicuous behind the barrier of weeds marking the boundary between thicket and clearing.

The sounds from the other side of the thicket were strange—difficult to identify—rather than loud. Slight scuffling among the dry leaves on the ground, but with an occasional rattling of twigs in the low-hanging branches. And they came as spaced repetitions across a thirty-foot front.

As the cracklings and scufflings moved into the haw thicket, I made out the forms of birds; five or six of them. One by one, they leaped from the ground in fluttering flight, then dropped back to the ground after fifteen or twenty feet of progress. Each bird ran a few feet across the new-fallen leaves, then again took to the air.

Was the group onto some new game of leapbird?

They had closed the distance to my crouched position enough that I heard anxious *peeting*. By then I had made positive identification. Bobwhite quail.

Obviously they were not moving through the cover just on some mission of their own. Their agitation said they were being pushed from behind. But what could make them so reluctant about it? Wouldn't it be simpler to up and away altogether? My visual search of all the visible area behind the birds on the ground and in the trees, revealed no cause for quail alarm.

One bird suddenly found an opening through the tangled branches, topped out over the thicket, and sailed directly toward me, probably heading for the clearing behind me. But Bob spotted me and turned back to the leafy carpet not much advanced from where he had taken off.

In that instant, the drama was screamed to a halt. A quarter mile across the woodland hollow, a blue jay screamed—once. That sentinel of the wild certainly had no concern with events in our thicket, yet that single warning cry had a remarkable effect on the quail. In spite of their anxiety about something in the woods immediately behind them, they heeded that distant alarm. Every bird stopped in its tracks.

The one nearest me, only forty feet away, had been running alertly stretched to full height. After the jay's

scream, I realized that its erectness had become horizontal inconspicuousness. Without visible motion, the bird became a mere slight bump among the dead leaves. When I scanned the rest of the thicket and returned, I almost couldn't spot my bird. No others could be singled out. Six quail had melted into the leafy carpet as if ordered by one of their own. So infectious was the tension of the situation that I discovered I was holding my breath. The silent seconds united into several minutes.

Then the quail were up and running, fluttering and peeting—just as if no jay had screamed. The nearest bird came directly toward me. I would bet that this was the same bird that spotted me in its aborted escape from the thicket. Apparently the threat from behind was important enough to erase the quail's memory of me crouching in front.

As the group ran closer, they changed direction to quarter across the edge of the clearing, remaining on the open ground under the hawthorns rather than plunge into the tangle of weeds that marked the edge of the clearing. The new direction angled them away from me, down over the crest onto the slope of the hollow and into the weeds, shrubs and scrubby timber.

Close behind the quail, at last came the cause of their fuss and ruffled feathers. And although the new arrival answered the basic question, it put half a dozen others in its place. Along the east edge of the thicket, tail fanned wide and neck feathers spread in full display, strutted a ruffed grouse.

With no sense of hurry, yet in a gait that kept it close behind the smaller birds, the grouse disappeared along the route the six had taken. For several minutes longer I heard dry leaves being stirred by scurrying feet and heavier measured footfalls.

Was the incident complete? I waited a long time, but the woods, thicket and clearing remained quiet. No other animal—winged or four-footed—came. Obviously, only the quail and grouse were involved. That raised the questions.

All that I had seen and heard stated that the grouse was herding the quail. Out of his woods? Out of his life? Simply because they were quail and he a grouse?

Or could it possibly be some sort of game among the birds? If it was serious business, and the quail were really frightened and anxious to leave, why didn't they simply scatter and regroup in the big meadow a hundred yards from the haw thicket?

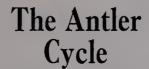
The quail made no serious effort to escape. The grouse made no direct attack upon them. (Having once been set upon by an angry grouse, I can vouch that one of these birds bent on attack makes no secret of it.) Then there was nothing more than the call of a distant blue jay to make the birds break off the affair at hand to heed that far-off warning. Was this just a game?

I have no answers. I wouldn't even want to propose a theory. Would you?

Deer's antlers are shed in late December and January.



Skin soon forms over the pedicle.



Text and Photos by SAM MONTGOMERY Blacksburg During late
July and
August the
antlers grow
very fast and
begin to
harden. The
sensitive velvet helps the
buck avoid
branches and
other obstacles.

The buck white-tailed deer produces a set of antlers each year except possibly during his first year. Deer antlers as thought of by the average person are the fully developed and hardened antlers characteristic of bucks during the fall and early winter. Leading up to these fully developed antlers is a sequence of exact growth stages which very few people have been fortunate enough to have ever observed. The growth and development of antlers is a complex mechanism controlled by the interactions of the deer's hormones with the availability and transport of the mineral constituents of the antlers. This mechanism is synchronized by seasonal light changes. The stages of antler growth are depicted in the accompanying photographs.





By late August antiers are fully developed and hardened.



Throughout the spring and early summer, antlers grow slowly. The first fork appears during May.

The growing antler consists of cartilage, blood vessels, and multiplying cells covered with very sensitive skin and fine hair called "velvet."

During September the blood supply to the velvet is restricted, and it withers and dies. The buck hastens the shedding of the velvet by rubbing on small trees and shrubs.









N this day and age, sportsmen derive as much enjoyment from anticipating or planning a hunting trip as they get from the trip itself. Have you noticed the feature columns and advertising now appearing to give the sportsman advice on how, when,

pounds, represents many hours of

pleasant planning, research and shop work. Note the 87 grain load on the left and the 120 grain load

on the right. The heavier load is

seated deeper in the cartridge case.

what and where to hunt?

There is a certain group fondly referred to as "gun nuts": those persons completely entranced with firearms and their use. This includes anyone from the sportsman with two guns (each, in his thinking, for a specialty hunt) to the dedicated reloader with his custom-designed guns. These people get as much pleasure from being wrought up in discussions of suitable bullet weights, powders, primers, twist of rifling in the barrel, calibers and many other factors as did the old-time, circuit-riding, revival, pulpit-pounding preachers with their one way to salvation. All have their "druthers," and each sportsman takes pride in thinking he knows the best way to accomplish what he considers important. Back in the early 1950's, as a fresh new biologist just out of school (with house payments, car payments, new babies), I was a two-gun man. I had one shotgun and one 30/06 rifle. I was learning to be a gun nut; I was reloading my own ammunition (how could you afford factory ammunition with those financial obligations?). My home loads with 180-grain bullets were doing fine on deer. While it would lay a deer down, he did not always stay there. I remember one deer blood trail I followed for four hours before getting meat for the table and another hide towards making a jacket. I was also reloading 110-grain Sierra bullets for the 30/06 for groundhog hunting. I was convinced a man should have one rifle, know how to handle it expertly, and he would make less mistakes in the fall of the year.

In time I came to realize I was getting stomped around using a 30/06. As someone remarked, such a gun "kills out one end and wounds out the other." It does have approximately 18 pounds of recoil. I decided I could do the same job a lot easier with less caliber, and less stomping.

At that time a legal deer rifle in Virginia had to be of at least a .25 caliber. I was entranced with a

column by Jack O'Conner, in Outdoor Life, on the .257 Roberts. I obtained a barreled action, restocked it myself (although a co-worker of mine referred to it as a handle), and set out to have an all-purpose gun. We cut the barrel to 20 inches, giving up some muzzle velocity but making a better brush gun. All excess weight was pared off, several times, until I had a loaded rifle, scope, and sling weighing seven pounds. I used one set of scope bases, but two different scopes: 10X for groundhogs and 2-1/2X for big game. I used 87-grain bullets on groundhogs with the 10X scope. I remember walking out a long 237 paces in Fauquier County one day to see if I had connected on a 'hog in a hay field; yes, I did! Along the way, I had the rifle throat reamed so I could use 120-grain Jordan bullets for deer hunting. While the factory load is a 117-grain bullet, I was convinced the extra three grains were worth the trouble. By reaming the throat, I gained more powder capacity. I was of the opinion I was shooting a 120-grain bullet almost equal to the 130-grain .270 in velocity.

Over the years I've brought home 14 deer killed with this rifle, and I have never had to follow a blood trail to get my game. Seldom has the bullet gone completely through the animal, meaning all the energy was spent against the animal. I'm not such a good shot that all were killed with one shot; but every time a deer was hit, he went down.

An interesting sidelight on the development of this gun is the accuracy I obtained with it. I started shooting on the range with just about maximum loads (44 grains of #4350 powder), and found I had to reduce the load to 41 grains to obtain acceptable accuracy.

Today, the .257 Roberts is just about a thing of the past, practically an orphan. It was started about 1906, and lasted just about 60 years. The more modern .243 and 6-mm do about the same thing, are easier to acquire and more popular with the public.

With the introduction of the early small game season in Virginia (first Monday in November), the sportsman is offered many new challenges and opportunities. Squirrel hunting is not at its best, but better than it is three to four weeks later. Most of the mast is on the ground, but squirrels are still running up and down trees enough to provide interesting sport. It affords a rifle shooter the time of his life. He frequently can have shots at 75 to 100 yards or more; most of the leaves have also dropped by then. If you are using the most frequently used squirrel rifle, the .22 rim fire, you are certainly undergunned for the chance at a turkey. I've shot a few turkeys with a .22 rim fire, and it has always resulted in a mad chase to get my hands on the turkey after hitting him, even with a .22 high-speed hollow point.

I decided to see what I could do with the recently popular .222 rifle in this early season. It can easily be considered too much gun for the gray squirrel. I know the most popular bullet weight for this gun is the 53-grain hollow point. This is what most of the bench-rest shooters use. I started with the 50-grain bullet. I wanted to use an interchangeable load, without the necessity of changing sight settings between varmit shooting and a meat load. With this in mind, I used 50-grain soft point bullets and 50-grain full patch (solid nose) bullets. Using 19-½ grains of #4198 powder with both bullets, I have been able to obtain the same point of impact.

My nephews in Fairfax think the old man is nuts to be hunting squirrels with a gun that big, but a rifle this size makes such a nice sound when animunition is shucked through it. In addition, you feel like you are holding more in your hands when handling such a firearm. If you try to make only head shots, it adds to the sport, but again a .222 with a 6X scope has proven a very effective and enjoyable firearm.

Even my most friendly gun nuts—bench-rest shooters—frequently have as their favorite deer-hunting weapon the old standard, a Winchester Model 94 in a 30/30 caliber with open-iron sights. Which means, while they have strong "druthers" on some facets of rifle shooting, they also use other guns.

Speaking of other guns, I suspect there are more shotguns in use than rifles. As most readers are probably aware, 29 of our counties in eastern Virginia have some form of restriction on rifle shooting. All too often, I have heard of dedicated deer hunters in the east believing only in double ought (00) buckshot. A lot of deer in eastern Virginia take one or two pellets well back in the abdominal cavity, resulting in a break in the intestine and a slow lingering death—a waste of a wonderful resource. Perhaps the following chart will stimulate sportsmen's thinking.

As a youngster in eastern Virginia, I grew up thinking #4 buckshot was the only load to use. The number of pellets per load was an added advantage if you got a chance shot at a wild turkey. I remember making a double on a turkey flock flush in Halifax



12-GAUGE BUCKSHOT LOADS

Load Number	Caliber of Pellet	No. Pellets Per Load
#4 BS	.24	27 ea.
#3 BS	.25	20 ea.
#1 BS	.30	16 ea.
#0 BS	.32	12 ea.
#00 BS	.33	9 ea.

County years ago with those #4 buckshot. In recent years I have come to think #1 buckshot with 16 thirty-caliber balls is better.

Not to be forgotten before we finish these comments on guns, powder, 'n things is the shotgun slug. This is the only legal weapon for deer at Quantico, and while I had trouble thinking of a Marine without his rifle, we cannot find fault with their hunter safety record. When they investigated safety on other public hunting areas, they concluded shotgun slugs were the safest. Quantico has been open to public hunting since 1960, providing 10,000 man-days of hunting in the early years and 20,000 man-days in recent years. One freak non-fatal accident occurred in 1971. I know there are other contributing factors to their safety record—training, education, and regulation—but their record is worth consideration.

The manufacturer's shotgun sights do not help the hunter in using a rifled slug. Many easy-to-install metal sights are now on the market, any one of which will help the sportsman do a better job. Also, not out of the realm of consideration is a scope on a shotgun. In my father's latter years, he had just one eye and it was not too good. He had a 1X scope fitted to his Ithaca pump and continued hunting squirrels, rabbits and grouse—as well as deer. That pump shotgun today will give three- to five-inch groups at 50 yards. Much beyond that distance, the one-ounce (415 grains) slug begins to fall off rapidly.

There are many opportunities for planning and anticipating the next hunt. This can be done twelve months out of the year—spreading out the enjoyment of being afield with equipment you know will work.

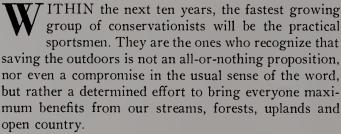


The author's unaltered manufacturer's model, caliber .222. Notice the 50 grain soft-nose and full-patch (solid-nose) bullets.

THE PRACTICAL SPORTSMAN

By GEORGE M. DODSON

Harrisburg, Pennsylvania



THE PRACTICAL SPORTSMAN knows that for every actual foe of conservation there are hundreds of citizens who don't much care one way or the other. So the sportsman's strength centers not so urgently on struggling with those who are against him as in winning prompt and active support from the thousands who at the moment remain uncommitted.

THE PRACTICAL SPORTSMAN looks in his dictionary and finds one definition of conservation listed as "official supervision of rivers, forests, etc." He correctly translates that into meaning he needs many more voices in addition to those of his present friends if he intends to show steady progress.

THE PRACTICAL SPORTSMAN understands the impossibility of having ideal hunting and fishing conditions such as supposedly existed long ago, unless he also advocates going back to the old standards of living. When he tries to reconstruct nature from the past, he also studies enough history to help maintain reasonable balance. Backed by this knowledge, he's in better position to work for a future that consolidates the best parts from all that was and all that is. His solutions won't be perfect but they will be sensible.

THE PRACTICAL SPORTSMAN soon sees that he cannot consider anything about conservation as being self-explanatory. What seems elementary to experienced outdoorsmen must still be spelled out for people who have taken small interest in the subject, and who even now have no intention of becoming deeply involved. It would be nice if they could be educated in the finer points of conservation, but at least for the present it must suffice to convince them.

THE PRACTICAL SPORTSMAN seeks short cuts in earning the public's goodwill and approval of his



aims. And the most efficient method he discovers instantly available—in his specialized organizations devoted to the outdoors. Because people can keep closer watch on the activities of groups rather than individual sportsmen, and because of the publicity given major projects, the practical sportsman insists that his clubs and associations command confidence and respect. Then, when they indicate what they believe must be done, the average citizen will accept such statements even if he does not completely understand. Public trust is the practical sportsman's goal.

THE PRACTICAL SPORTSMAN does not waste his energy in arguments which get nowhere—like, for instance, how much time we have left for any certain accomplishments. He appreciates the fact that in order to achieve maximum results, the real question is, "When can we start moving?" Being practical he views matters as how much greater the opportunities are if we begin now, rather than theorizing on how long we dare wait before getting under way.

THE PRACTICAL SPORTSMAN knows he doesn't have all the answers. So he sets out to enlist the help of original thinkers in his community by first securing their attention and interest in the general subject of conservation. He knows that once they become involved they will contribute their ideas on desirable aims for local organizations. Conservation requires plenty of manpower and womanpower to perform difficult assignments, but it also benefits from a flow of worthwhile plans and ideas. Saving the outdoors must be a cooperative venture, and brains are not least of the factors in demand.

THE PRACTICAL SPORTSMAN studies his personal talents in order to utilize them more fully in speeding up the time schedule of the conservation cause. He may bring to his tasks all his ability to organize activities, and his experience in gaining most from whatever is available in work resources. To whatever extent the movement succeeds, it will be largely because someone like the practical sportsman kept the efforts coordinated and on target.



Edited by MEL WHITE



THE ORLAND E. WHITE ARBORETUM at Blandy Experimental Farm which is currently being used by Natural Resources students from Lord Fairfax Community College.

12 Kilometers Down the Trail

National Park Service Director Ronald H. Walker has announced that signs and park brochures soon will include metric as well as standard distance measurements.

"The switchover to the metric system has already begun in certain areas of private industry and in school systems in the United States," Walker said. "But most important for us is the convenience we can provide for the rapidly increasing number of foreign visitors to this country and our national parks and historic areas. At the same time, by providing metric alongside standard measurements, the NPS can provide a useful educational method for school children and the public at large to think in metric terms."

Lucky Dog

Jake Ellis won a 700 pound steer at the recent Blue Ridge Riders horse show. He'll probably enjoy it more than most, considering Jake Ellis is a registered English beagle.

Jake's owners, Mr. and Mrs. W. M. "Mack" Ellis of Rt. 4, Lexington, purchased four chances on the steer; the winning one was in Jake's name.

"HANDGUNS FOR SPORT" is the title of a new booklet written by Ted Trueblood on the why, how, and where of revolver and pistol shooting. In 18 pages of advice and information, the booklet outlines the case for safe, rewarding family fun with handguns. The booklet is available at 25¢ per copy from the National Shooting Sports Foundation, 1075 Post Road, Riverside, Connecticut 06878.

Natural Resources Program Gains Popularity

The Natural Resources Management and Security program initiated at Lord Fairfax Community College last fall has become a popular success with students interested in outdoor occupations.

During the 1972-73 academic year, over 60 students enrolled in the forest and wildlife management course, and letters have been received from all sections of Virginia and the South requesting information about the program. Many of the inquiries were stimulated by *Virginia Wildlife's* descriptive article last summer.

Natural Resources Management and Security, a two-year program leading to an Associate in Applied Science degree, is intended to support students seeking career opportunities within natural resources law enforcement, the national and state park services, and related occupations including the fast-growing privately owned recreational development field.

The University of Virginia has authorized the community college use of their facilities at Blandy Experimental Farm and Orland E. White Arboretum, located near Boyce, Virginia, for educational purposes.



FRAN BALLISTRI'S MUSKIE from Burke Lake was a real whopper, weighing 16 pounds 1 ounce and measuring 41 inches long.



MEY KIDS YOU CAN HELP MAKE THIS COUNTY AND FOUND THE PARKET TO LIVE AND GET PRAYE TO DOING IT!

CAREERS is the subject of 15 POPEYE publications in comic book format, covering varied vocational fields. Two would be of particular interest to persons considering the conservation field, one titled "Popeye and Environmental Careers"; the other, "Popeye and Agri-Business-Natural Resource Careers." Cost per copy ranges from \$.25 to under under \$.11, depending on quantity (price list and booklets obtainable from King Features, 235 E. 45th Street, N. Y., N. Y. 10017).

Owens-Illinois Rewards Girl Scouts

According to Game Commission Land Coordinator J. W. Engle, Jr., five Girl Scout troops won \$25 awards in the annual Owens-Illinois Company beautification and recycling program in Virginia: #463, Cadettes, Crozet; #593, Juniors, Culpeper; #886, Cadettes, Halifax; #384, Juniors, Rustburg; and #284, Cadettes, Danville. Girl Scout Troop #463 went on to become a national winner and received \$250.00 for their cleaning an area behind Crozet Methodist Church and creating a mini-park on the site.

Owens-Illinois is one of the State's large landowners and timber-using industries, and cooperates with the Game Commission by making available to sportsmen each year more than 35,000 acres of land for hunting, fishing, and other recreation purposes.

200th Birthday Cleanup

Johnny Horizon '76 is a nationwide, action-oriented environmental awareness program to clean up America for our 200th birthday—then keep it clean! Sponsored by the U.S. Department of the Interior, Bureau of Land Development, (Office of Information, Interior Building, C Street between 18th and 19th, N.W., Washington, D.C. 20240), Johnny Horizon '76 sends youngsters who want to help "Clean up America" a packet of materials that includes a partner letter with a coloring poster, information sheets, car litterbag, partner "Snoopy" pamphlets, bike decal and pledge card. Youngsters who pledge to help the campaign are issued a Partner Certificate.



Some of the ways young Partners can help Johnny Horizon '76 include:

* Making useful items out of discarded materials,

* Washing walls, sidewalks and fences that have been defaced with drawings and slogans,

* Helping elderly citizens clean up around their homes,

* Creating and caring for gardens,

* Involving their friends and families in the campaign.

In monthly teachers' guides Ms. Carol Euston, Washington, D.C., teacher, suggests ways to make environmental education a continuing area of classroom study:

- * Establish a classroom ecology center.
 - * Adopt a class pet and class tree,
 - * Build a terrarium,
 - * Organize a school litter patrol,

- * Tour museums, zoos, arboretums, aquariums, botanical gardens.
- * Sponsor poetry and story contests on environmental topics, and
- * Take field trips to observe and record pollution problems such as uncontrolled burning, deteriorated buildings, erosion, etc.

Tree Ring Leaflet Available

A non-technical leaflet, entitled *Tree Rings: Timekeepers of the Past*, has been prepared by the U.S. Geological Survey, Department of the Interior, to answer inquiries about trees and how they serve as "natural recorders" of the environments in which they live.

The 15-page leaflet, available by purchase from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, at 20 cents per copy, is the latest in a series of more than 50 non-technical publications prepared by the USGS to answer questions about the earth sciences and natural resources. Some others in the popular series include: Natural Steam for Power, Geologic Time, Water and Industry, Gold, Oil Shale, Volcanoes, Earthquakes, Water of the World, Geysers, Glaciers, Topographic Mapping, and The Great Ice Age.



Trout Dale's Richard E. Mabe took this 20 lb. 5 oz. carp measuring $34\frac{1}{2}$ inches from New River in July.

HUNTING SEASON ROUNDUP GROUSE DEER Novamber 12 - Februery 15 — Statewida - Beg Ilmit 3 per dey; 15 per license year. Novembar 12 - February 15 Stetewide - Bag limit 8 per day; 125 per license year. Stetewide - Bag limit 6 per dey; 75 per license year PHEASANT - November 12-17 November 19 - Jenuery 5-Two deer - per 8AG LIMIT — One cock 8ird per day Two per license year. Gethright Wildlife Menagement Area Closed. license year, either sex
Sussex end Southempton Countles. Wildlife Menagement Area Sirds must be carried to the nearest chacking station where an official phaseant see will be experimental secon to detarmine distribution and establishment of these gome birds so occurde reporting of kills is extremely important) November 19 - Dacember 1 - One deer* per license yeer, bucks November 19 - Jenuery 5 -- Two deer* per license yeer, one of in Bland, Campbell west of the Southern Reliroed, Cerroll, Clarke, Dickenson west of Floyd, Franklin, Glies, Greyson, Hanry, Lee, Montgomery, Northempton, ania west of the Southern Reliroed, Puleski, Roenoke, Russell, Scott, Smyth, Tezewell, nor, Wise, and Wytha Country. nich may be a doe during the lest twelve hunting deys only. In Amelier, unswick? Buckinghams. Caroline, Chestarlield. Cumberlande. Olinwiddler, Essex, wanner, gloucestar, docchine, Gresnwille, Henrico, James City, King and Queen, Powneard, and Gueen, Powneard, Powne November 19 - December 1 - One deer* per license yeer, either Novambar 19 - Jenuary 5 — Two deer* per license year, one of nich may be e doe on the lest 6 hunting deys only In Accomack t, Charles y, Hanover, New Kant, Spotsylvania, and Stafford* Counties. 8 last day Only. In Allagheny, Amharst west of U.S. Routa 29, Auguste, Beth, Botstourf, Campball wast of Southarn Reliroad, Clarka, Craig, Frederick, Highland, Wast of Routs 1811, Page, Patrick, Rockbridge, Rockinsham, Shanardoah and Wast Countres.

November 19 - January 5 — Two deer* per licensa yeer, one of which may be a doe the lest hunting day only.

In Albamaria, Amnarst east of J.S. Route 29, Appoint to X. Campbell east of Southern Railroad, Charlotte, Culpapar, Fairfex, Route 151), Orange, Princis dewed, Prince Howell, Madelon, Medicine, Medicine (set of Route 151), Orange, Princis dewed, Prince William Fand Repeatementack countries. October 1 - Novamber 30 - Two deer* per licensa year, bucks Only in Virginia Baach and Chesapaaka Cities and that portion of Nensamond County lying east of the Olemai Swamp Lina. (see abova) Noyamber 10 - Jenuary 5 — Two deer per licanse year, one of which may be a doe on the last 12 hunting days in lists of wight and that portion of Nansamond County lying west of the Olsmai Swamp line. (see abovs) Novembar 19 - Jenuary 5 - Two deer* per license yaer, bucks **SQUIRREL** TURKEY BAG LIMIT BAG LIMIT: 8 per day, 78 Three per license yeer, no more than two of which mey be taken in the fell, and no more than two of which may September 1 - 15, November 12 - January 31 In Brunswick (except Camp Pickett), Greensville, Lunanb September 15 - October 14: Novamber 19 - January 1 in Carroll, September 15 - 30, Novamber 19 - January 1 FALL SEASONS November 12 - December 31 in Allegnany*, Auguste, Bath*, Clarks, Botatourt, Craig, Fradarick, Glies, Highland, Montgomary, Pegs, Roanoka, Rockbridge, Rockingham, Shanandoah and Warran countlies, TWO OF EITHER SEX. *axcapt Gathright. October 1-14, November 12 - January 31

In Accomack, Alleghany, Amhart, Aujusta, Cisrke, Culpeoper
Loudour, Louise, Madison, Nensmond, Nation, Northempton,
Northumberland, Pege, Prince William, Rappahennock, Richmond,
Rockbridge, Rockingham, Shanandosh, Spotsylvenie, Stefford,
Warran and Westmoraland Counties. November 12 - January 31 ie, Amharst, Appomettox, Bath, Botatour, Ilina, Charles City, Charlotta, Chasterflaid, ciddla, Essax, Fluwanna, Gloucester, Gooch var, Hanrico, Highlend, James City, King and Sim, Mathews, Middlesex, Nalson, New Ker, Sussex, and York Countlas and in Hempton, Sussex, and York Countlas and in Hempton, November 12 - December 31 In Albameria, Amelia, Amh Appomettox, Badford, Bland, Brunswick, Buckingham, Campbali, Carolina, Chari-Chastarfield, Culpsper, Cumberiand, Olimiddia, Esser, Ferfax, Faudus, Fluva Franklin, Goochland, Grayson, Graane, Greensvilla, Halfax, Kring, end Gueenfol, Grans, Pittsylvani, Pownatan, Prince Edward, Prince George, Prince William, Pul. Rappairannock, Russell, Smyth, Spotsylvania, Stafford, Tazawell, Washington, wyths Countries, BEARGED TURKEYS ONLY. September 15-30, November 12 - Jenuery In Bland, Botatourt, Buchenen, Creig, Dickenson, Glies, Lea, lenburg, Montgomery, Puleski, Roenoke, Russell, Scott, h, Tezswell, Weshington, Wise and Wythe Counties CLOSED TO FALL TURKEY HUNTING CLOSED TO ALL TURKEY HUNTING BEAR Bag Limit--One per license year at least 100 pounds live weight CLAPPER AND SORA RAIL Female Bears accompanied by Cubs may not be killed. Season: September B - November 16 Bag Limits: A total of 15 clapper and king rails counted together a day, 30 in possession, and 25 sora and Virginia rails, counted together a day, 25 in possession. November 12 - December 31 - Statewide Season: September 15 - November 10 December 22 - January 3 Hours: From 12 o'clock noon until sunset each day. Bag Limit: 12 a day, 24 in possession. November 5 - January 5 - In Blend, Giles, Grayson, Montgomary, Puleski, Russell, Smyth Season: October 15 - December 18 Bag Limit: 5 a day, 10 in possession October 1 - November 30 - In the Dismal Swamp Including all of Virginia Beach and aka-cities and thet portion of Nansemond County lying east of the Dismal Swamp Line

November - January 5 - In Isle of Wight and that portion of Nessemond County lying wast of the Dismal Swamp Line

Season: September 1 · January 12
Bag Limit: 7 a day, 14 in possession before the regular waterfowl season. During the waterfowl season, sea ducks count 10 points.



Edited by JIM KERRICK

NOAA VHF-FM Radio Weather

The National Weather Service is providing mariners with continuous broadcasts of the latest weather information from selected locations throughout the United States. These NOAA VHF-FM Radio Weather transmissions repeat taped messages every four to six minutes. Tapes are updated periodically, usually every two to three hours, and amended as required to include the latest weather information. Messages include weather and radar summaries, wind observations; visibility, sea and lake conditions, and detailed local and area forecasts as well as information tailored to the needs of boating enthusiasts, swimmers, surfers, fishermen, and others who use the water for work or recreation. When severe weather warnings are in order, routine transmissions are interrupted, and the broadcast is devoted to emergency warning operations.

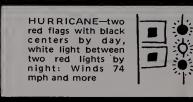
NOAA VHF-FM Radio Weather transmissions can usually be received up to 40 miles from the antenna site, depending on terrain and the type of receiver used. Where transmitting antennas are on high ground, the range is somewhat extended. The frequencies 162.550 and 162.40 MHz lie above the commercial FM frequencies, which end at 108 MHz. Therefore, special tuners or receivers are required. These are becoming available in an increasing variety of types, ranging in price from less than \$20 to \$200 or more. In general, the better the receiver and antenna, the better the reception.

> FOR WEATHER INFO TUNE 162.550 & 162.40 MHz









Watch the Weather

Watch yourself in good weather, too. You sunburn faster on a boat than almost anywhere else. Reflection off the water doubles the sun's power, and a severe case of sunburn can immobilize you or cause sun stroke. Children, particularly, don't realize how fast they can get a bad burn when on the water. Keep suntan oil or cream aboard, and use it.

Weather Rules for Safe Boating

Before setting out:

- 1. Check local weather and sea conditions.
- 2. Obtain the latest weather forecast for your area from radio broadcasts.

When warnings are in effect, don't go out unless you are confident your boat can be navigated safely under forecast conditions of wind and sea. Be cautious when you see warning displays at U. S. Coast Guard stations, yacht clubs, marinas, and at other coastal points.

While afloat:

- 1. Keep a weather eye out for the approach of dark, threatening clouds, which may foretell a squall or thunderstorm; any steady increase in wind or sea; any increase in wind velocity opposite in direction to a strong tidal current. A dangerous riptide condition may form steep waves capable of broaching a boat.
- 2. Heavy static on your AM radio may be an indication of nearby thunderstorm activity.
- 3. Check radio weather broadcasts for latest forecasts and warnings.
- 4. If a thunderstorm catches you afloat:
 - —stay below deck if possible;
 - —keep away from metal objects that are not grounded to the boat's protection system;
 - —don't touch more than one grounded object at the same time (or you may become a shortcut for electrical surges passing through the protection system).



The Pintail

THOUGH not as resplendently plumaged as the wood duck, the drake pintail is ranked by many as the loveliest of the waterfowl. Its gracefully elegant curves and slim, greyhound-like contours more than compensate for its lack of bright color.

Other qualities it has, too, that make it a fine game bird. Swift aflight, intelligent and wary, it is a trophy well-earned. And, since it is strictly a vegetarian, it ranks high as a table bird, second only to the mallard and the black duck among the puddle ducks.

The pintail drake is nearly the size of a mallard, but seems smaller because of its slimmer proportions. It may be recognized by the long central tail feathers, which are elevated while the bird is swimming. The white stripe on both sides of the neck and the chocolate brown head and throat are other characters. The hen is a nondescript brown, but her slim, dainty build should serve to identify her, along with the slightly pointed tail.

In flight, the slender, streamlined look of the pintail is even more accentuated, and is the best field mark when they are flying at some distance. Closer up, the NOVEMBER, 1973

needle tail and white-bordered speculum confirm the identification.

There are few birds more widely distributed than the pintail. Its breeding range is nearly circumpolar, in the American race extending south to California and Iowa. The Eurasian form nests south to Spain and the Caspian Sea. In winter, they spread out over a territory even more vast: on the Atlantic coast south to Jamaica, and on the Pacific to Central America. European birds reach Nigeria and Uganda, while the Asian population migrates to India, Burma and Ceylon.

Though Virginia does not lie within the normal breeding limits of the pintail, it has nested at Roaches Run Sanctuary, near the National Airport in Arlington. These two instances occurred back in 1937 and 1938 when the Sanctuary was not nearly so noisy nor as polluted as it is now. Chances are that these were crippled birds, anyhow.

Normally they leave these parts in March and do not return until October, and are transient in good numbers through November. Many remain during the winter, concentrating in tidewater marshes and along the coast.

